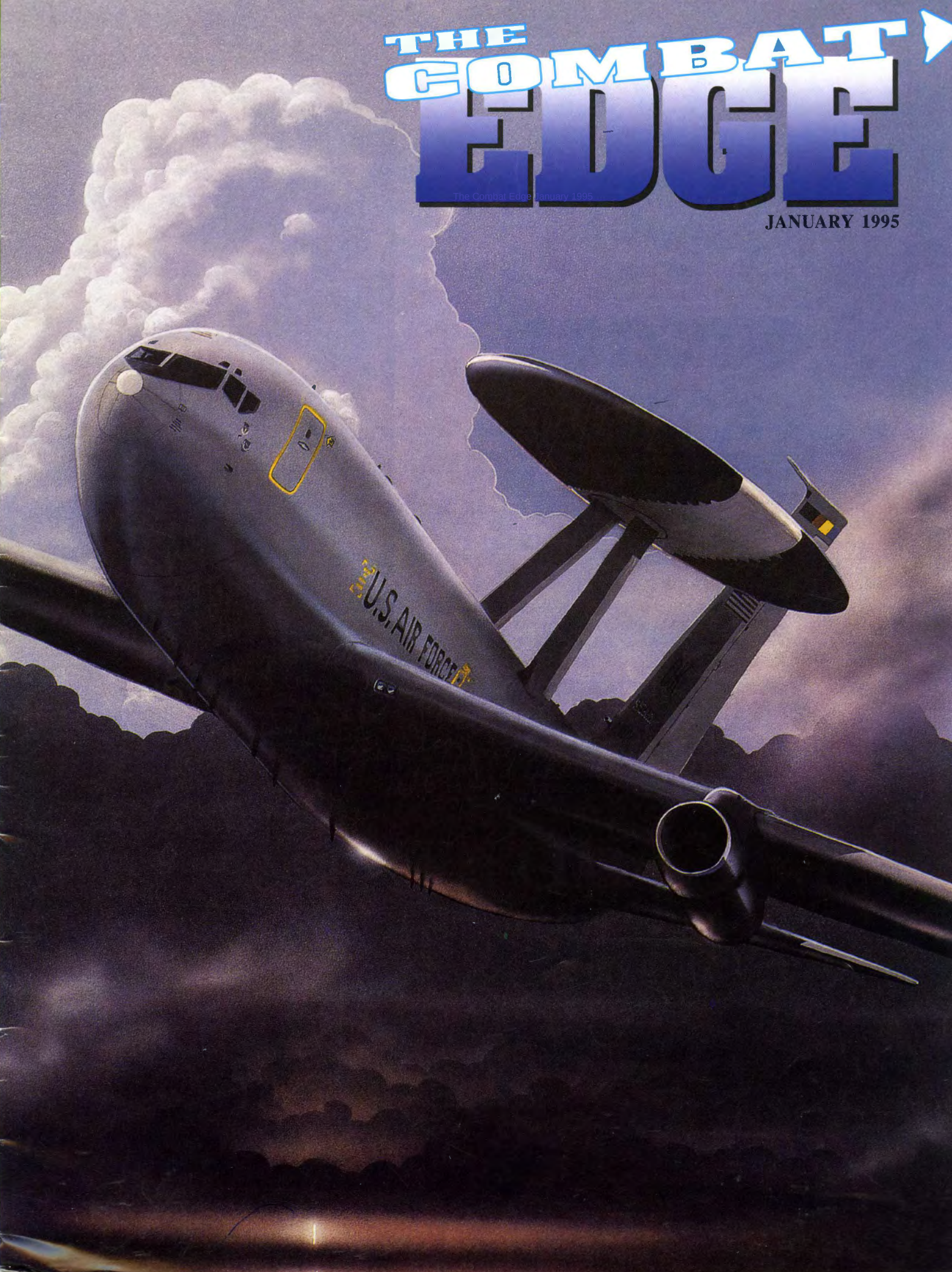
THE COMBAT EDGE
The Combat Edge January 1995
JANUARY 1995
U.S. AIR FORCE

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THE COMBAT EDGE

Air Combat Command Safety Magazine

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CULTURE SHOCK
"As a commander, the best thing you can do for your unit is to create the right culture, one that emphasizes trust, integrity and leadership, and deeply root it into the very fabric and operation of the unit."

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ABOUT THE COVER

This months cover of an E-3 Sentry AWACS was provided by Sergeant Darby Perrin. Sergeant Perrin is currently an Airborne Communications Technician in the 964 AWACS from Tinker AFB, OK.

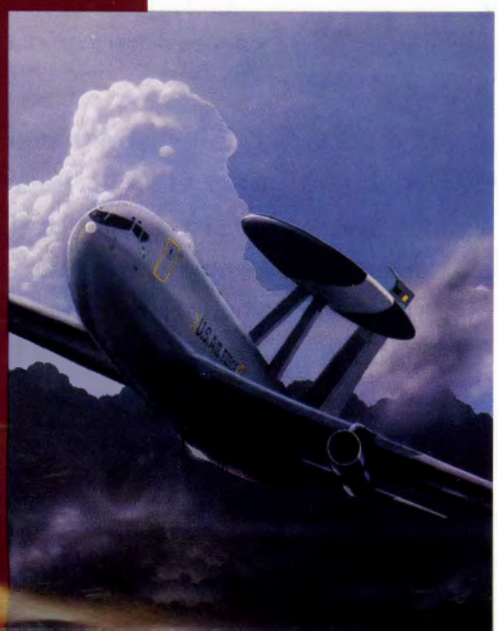
ACCent on Safety

Welcome back from the holidays. I sincerely hope that everyone enjoyed some well-deserved time off and a fun-filled holiday season with family and friends. Now that we're all back, we're ready to jump right into our hectic routines and fast pace operations — or are we? Before everyone answers with a resounding "yes," let me remind you that January is one of our most hazardous months of the year. The holidays afforded many of us the opportunity for extended periods of leave and time off from the job. As a result, there are a myriad of subtle differences in our frame of mind, focus, and abilities that may not be readily apparent when we return to work. In addition, some of our people, unfortunately, did not have an enjoyable holiday season. For whatever reason, many people are experiencing post-holiday depression and/or stress.

Do you catch yourself in the "back to work" syndrome, wishing that your time off or leave had lasted just one more day? Whether you realize it or not, you're not as good as you were when the holidays started. Your limitations are not the same as they were. You also have to consider that you're not the only one who may be a little behind. Everyone else is experiencing a gradual return to their normal operating abilities as well.

A relaxing holiday sometimes tends to relax the mind too much and picking up a high pace in early January has sometimes proven unwise and fatal. Common sense must prevail. If you're not ready to run — WALK! Get your G-tolerance, your driving legs, munitions handling procedures, etc., back before you try to go full bore. There is no peacetime need to press or take unwarranted risks.

Another factor that makes January so hazardous is the significant transition to "real" winter weather that is now taking place. Nearly all ACC bases will move into serious winter conditions this month. Have you considered the changes that must occur in your normal routine: longer drives to work or to respond to a recall, more clothes to keep you warm, longer preflights, longer time to taxi out to the runway due to ice and snow? Or, do you act as though nothing has changed?



All of you working on the flightline and around the base such as crew chiefs, security police, supply folks, and everyone else have just as many challenges from the weather. Everyone needs to take into account how the hard conditions of winter will affect their duties and mission accomplishment. Take that few extra minutes to consider all the ways weather conditions can impact your daily routine. Remember, "Failing to prepare is preparing to fail."

Congratulations to my good friend Col Pete Tkacs and his staff at HQ AETC on their highly successful entry into the world of mishap prevention publications. The first four issues of *TORCH* were outstanding. We're looking forward to continued excellence from Capt Laura DeSilverio and her crew. Thanks for your mishap prevention efforts.

With your help and concentration we can make '95 the best year yet! Work hard, play hard — **BE SAFE!**

Colonel Fack Acker
Chief of Safety

The Hercules in Transition

Reprinted
with permission from
Lockheed Service News
Vol 21 No. 2 April - June 1994

While the venerable C-130 has retained the external appearance of its heritage through the years, there are a number of improvements now being incorporated into some new production models that will not only improve its operational effectiveness, but will make a positive contribution to flight safety. The purpose of this article is to highlight some of those enhancing features. Many appeared in 1993 deliveries; others will be incorporated incrementally over the next two years.

Lyle H. Schaefer
Chief Experimental Test Pilot
Flying Operations Department

In C-130H deliveries to the U.S. Air Force and Air Reserve Component beginning in 1993, the cockpit of the Herc has a totally new look to it. The most notable feature is the subdued flat black and gray color scheme. This is the first hint that the cockpit has been reconfigured for something quite focused - flying at night! The customer mission requirement to use night-vision imaging systems (NVIS) led Lockheed to initiate a complete redesign of the cockpit in order to ensure NVIS goggle compatibility.

New Cockpit Lighting

This resulted in a totally new cockpit lighting system, as well as a modified crew alerting scheme to provide a safer environment for the crew when flying on night-vision goggles. In the redesign process, the overriding consideration in all decision-making was flight safety. It was recognized that flying low-level missions at night is in itself a demanding task, and it is even more demanding to fly them with one or more of the crew on night-vision goggles.

Different approaches have been taken to modify C-130 cockpits in an attempt to make them NVIS-compatible, but this is the first time that the C-130 cockpit has been production-configured by the prime contractor to be totally NVIS-compatible. The entire cockpit lighting is new. All of the panel lights are NVIS green, and all the incandescent floodlights have been replaced with green electroluminescent strips. The edge-lit panels with the screw-in bulbs have all been replaced with panels that have NVIS-compatible integrated back lighting.

Many of the panel legends have been abbreviated or eliminated to reduce the overall cockpit luminance. All the instrument post lights have been replaced with new NVIS green lights. The pilot has a master, lever-lock switch that shifts all cockpit lighting to the NVIS mode. This safeguard protects the crew from an inadvertent illumination of a non-NVIS-compatible light during goggle operations. This switch not only shifts all the cockpit lights to a NVIS dim mode, but also converts the electronic displays to a NVIS-compatible color palette.

All of the panel lights have been balanced to give very uniform night lighting. In addition, the side shelves have been modified to include shields that block out reflective light from inside the cockpit on the side windows. Normal night operations in the cockpit have benefited significantly from these improvements, resulting in one of the best-lit and reflection-free night cockpits in existence today. This will make seeing outside the cockpit at night more efficient and will eliminate reflected-light interference with external visibility, thus improving the safety of night operations.

New forward windshields will allow 50% more NVIS frequency-band light to pass through. This will not result in a noticeable change in non-NVIS night viewing, but will significantly improve NVIS goggle effectiveness under comparable lighting conditions, allowing the crew to maximize the viewing utility of the goggles.

Aircrew Alerting System

When using the NVIS goggles, the pilots' field of view allows them to see the instrument panel by looking underneath the goggles, but restricts their ability to see the overhead or side panels. It was concluded that having warning, caution, and alert lights distributed throughout the cockpit panels would not be acceptable in the night-vision goggle environment.

To solve this problem the cockpit was modified to conform to MIL-STD-411, Aircrew Alerting Systems, as well as MIL-L-85762, the military specification for NVIS-compatible cockpits. The approach included the incorporation of the Mode Advisory Caution and Warning System (MACAWS). This system ties all caution alerts to two master caution lights that are imbedded in the glareshield, places two sets of warning alert lights in panels directly adjacent to them, and relocates all existing caution and advisory lights to a centrally located panel.

These changes put the master caution and warning lights in a position to get the pilots' attention, and allow the pilots to see which alert has triggered them even if the night-vision goggles are being used. All of the lights that are employed in the MACAWS are purposely located in such a way as to ensure that they will be readily visible to both the pilots and the flight engineer at all times.

Optimizing the Layout

A major design objective was to clear everything off the top of the glareshield, and to optimize the shape of the glareshield to provide an improved external

By day: the NVIS-compatible cockpit features a clean new layout, updated instrumentation.

columns of lights, is now located in the center instrument panel in place of the bottom three rows of engine instruments. The panel is divided into zones; the top zones are reserved for cautions and the bottom zones for advisories. To make room for this panel, the oil temperature, oil quantity, and oil cooler flap gages were moved to the overhead right-hand side of the fuel panel along with the oil cooler flap control switches. The fuel panel was simplified and condensed to make room for these gages and switches.

New alerts to warn of high engine oil temperature, low engine or gearbox oil pressure, or rudder deboost failure have been incorporated. The rudder boost gages have been eliminated from the cockpit, although actual direct reading pressure can still be read in the rudder servo area in the cargo compartment.

The layout of the caution/advisory panel was planned to keep related system lights grouped together. The left four columns of the panel are devoted to engine-related alerts, with the most important cautions at the top of the cautions zone and the most important advisories at the top of the advisory zone. On the right side, other zones for electrical, hydraulic, bleed air, and fuel were established.

The typical aviation yellow for caution lights had to be abandoned in favor of NVIS green in this panel. To assist the crew in identifying a green caution light as a caution indication when it triggers the master caution light, the individual caution light flashes along with the master caution lights. Pressing either master caution light to acknowledge the alert results in the master caution lights going out and the caution light shifting from a flashing to a steady condition.

All the lights that reflect flight director, autopilot, or navigation system modes are aggregated into two mode light panels conveniently placed in the flight instrument cluster on the forward instrument panel. A similar mode panel is located at the navigator's station to reflect navigation and system status. All of these lights conform to a standard that allows a maximum of eight letters, numbers, or spaces; thus maintaining large, easily read alphanumerics of consistent size.

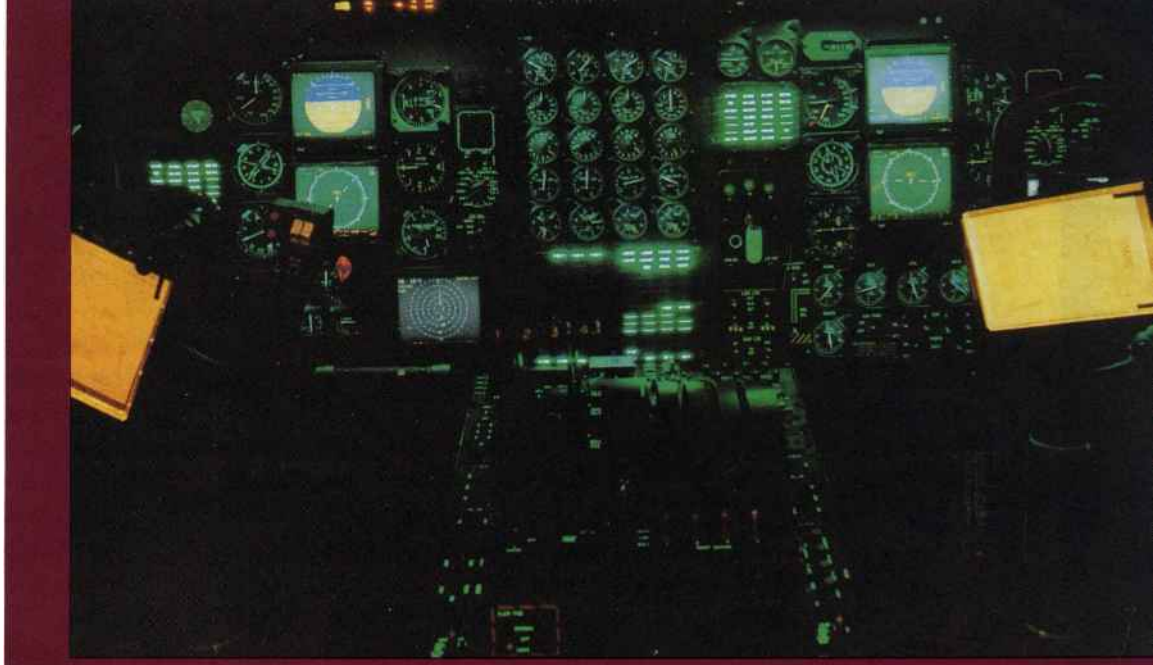
Electronic Flight Instrument Displays

Another cockpit feature that is immediately noticeable is the use of electronic flight instruments (EFIs) in the instrument panel. Four of these are color, liquid-crystal, flat-panel displays that replace the conventional electromechanical attitude director indicators (ADIs) and horizontal situation indicators (HSIs), two are radar displays, and two are vertical speed/Traffic Alert and Collision Avoidance System (VSI/TCAS) indicators.

These flat-panel instruments make the best use of color and are very bright and easily readable in direct sunlight, even with sunglasses on. They also are much easier to read in dusk conditions when the other instruments are hard to see in the transition between sun-in-your-eyes and darkness.

The new displays provide improvements over the electromechanical gages they replace and incorporate additional critical data. For instance, a digital readout of radar altitude is presented on the upper left corner of the ADI in large numerals. This single feature improves situational awareness during low-level work and instrument approaches. In response to customer requests, the combined altitude radar altimeter indicator (CARA) itself has been moved to the left of the HSI, just below the VSI, to a spot more convenient for the pilot's instrument scan.

The EFIs are able to do things that cannot be



By night: the normal nighttime lighting mode offers a beautifully illuminated and reflection-free operating environment.

achieved with electromechanical instruments. One such feature is that EFIs will only display data when it is available. On electromechanical instruments, needles must either be mechanically stowed or they will be left to rotate in a "hunting" mode. An example of this would be selecting a VOR station when no signal is available. On the electronic HSI, no data will be displayed; the conventional indicator would present a searching, rotating needle, which is distracting and disorienting.

Flight director commands are displayed in a standard V-bar format, making it very easy to track commanded roll and pitch commands without having to search for the correct bank angle. The pilot merely matches the aircraft symbol (which is a different color from the command bar) in pitch and roll to fly the commanded track. This reduces pilot workload and reduces deviations from the commanded track. The individual marker beacon lights have been eliminated and are presented in the upper corner of the ADI. When the marker beacon signal is received, it is presented in a square in the appropriate color with the outer-marker (OM), middle-marker (MM), or inner-marker (IM) letters.

The top of the HSI has a green inverted chevron that displays aircraft course (or track) relative to the heading. Drift angle is measured from the lubber (heading) line to the chevron and provides a simple cue to the pilot for flying approaches or any other precision tracking maneuver that requires compensation for drift. The pilot merely matches the chevron with the bearing needle or desired track and the airplane tracks directly to the station.

Another feature of the HSI is large numerals that "ferris-wheel" as the HSI rotates, i.e., the numerals always remain in the vertical orientation. In the right-hand corner, true airspeed and ground speed are displayed continuously. Static air temperature is shown in the lower left corner, so the need for the large ground speed, true airspeed, static air temperature, and drift angle instruments has been removed.

The need for a separate station-keeping equipment (SKE) range marker has been eliminated by integrating the SKE information into the electronic ADI. When the pilot selects SKE on his mode select panel, the ADI is configured to include range variations on the vertical flight director needle. An airplane symbol replaces the slow/fast symbol on the right side of the instrument, showing the deviation from the desired tracking interval. This allows the pilot to concentrate on the basic flight instruments and improves his situational awareness of the SKE picture within a much smaller scan pattern.

Digital Low-Power Color Radar

The other two flat-panel displays are used to display the new multimode digital low-power color radar (LPCR), flight plan, and SKE data. Each pilot has his own display and a display controller. The navigator has a monochrome display with a full set of radar controls. The pilots can bring up different displays at the same time. For instance, one pilot can be on SKE, while the other is on weather radar.

Developed especially for the Hercules airlifter by Lockheed and Westinghouse, the LPCR is unique to the Herc and a truly state-of-the-art radar. It has the following modes: ground map, weather, air-to-air skin paint, and wind shear. It is fully integrated with the self-contained navigation system (SCNS) via the 1553 data bus and

offers a quantum improvement in performance, reliability, and capability. The flight plan mode is available as an overlay to indicate the airplane's planned navigation route relative to weather, obstructions or other displayed features.

The Hercules is the first operational military aircraft to have a proactive, on-board, wind-shear alerting system. This system marks the wind-shear area ahead of the aircraft, allowing the crew time to take evasive action. The unique features of this radar will make a major new contribution to keeping aircrews out of harm's way.

In the area of ground safety, the new radar operates at such a low power output level that it can be operated on the ground without any restrictions on the proximity of ground personnel. This removes restrictions during operation pre-flights and eliminates the need to set up outside warnings.

Part of the upgrade of the navigation system is the installation of a second inertial system, a Global Positioning System (GPS) receiver. A standby attitude indicator is installed in the instrument panel. Gone is the C-12 compass system and the standby gyros. The second inertial system provides a more accurate attitude source than the gyro it replaces, and the dual heading outputs from the inertial systems exceed the C-12 system in terms of accuracy.

The GPS in combination with the Doppler beam sharpened mode of the radar will provide aircrews with very precise locator information. This opens up all kinds of possibilities in the tactical world, as well as making a vital contribution to navigating precisely to avoid ground obstructions. The radar cursor will couple with the autopilot for airdrops so that position updates can be used to improve drop accuracy right up to the drop point.

Traffic Alert and Collision Avoidance System

The TCAS II as installed in airliners is being installed in the Herc. This system includes two new liquid-crystal VSIs, which display both traffic alert information and vertical speed. TCAS information can also be selectively displayed in a larger format on either radar display. Mode "S" is incorporated in the IFF to support TCAS. The system gives the Hercules the same airspace alerts that the airliners have, providing additional protection against mid-air collisions. This will supplement the air-to-air skin paint mode of the radar, which displays digitally processed airborne target information on the radar display.

The new instrument panel incorporates threat warning indicators for both pilots. This will give them an immediate indication of the threat sector without the delay associated with communications from another crew member. The capability should enhance safety in a hostile environment, giving the pilots instantaneous information allowing them to react quicker to a threat alert.

Summary

No single item in this list of improvements can be tagged as making a major contribution to improved flight safety. But taken in aggregate, we believe they will make a positive contribution to the proven safety of the Hercules aircraft. Even with all these design and system improvements, the aircrew member is still the critical common denominator in the safety equation. Proper knowledge of how the aircraft systems work, what their limitations are, and the application of good judgment in their utilization is still necessary for effective and safe mission completion. All the safety improvements in the airplane can only be effective when operated by a well-trained, well-rested, and well-prepared aircrew. ■

Lyle Schaefer may be contacted at (404) 494-3049

ACColades

QUESTIONS OR COMMENTS CONCERNING DATA ON THIS PAGE SHOULD BE ADDRESSED TO HQ ACC/SEF, DSN: 574-7031

	TOTAL			ACC			ANG			AFR		
	NOV	THRU NOV		NOV	THRU NOV		NOV	THRU NOV		NOV	THRU NOV	
		FY95	FY94		FY95	FY94		FY95	FY94		FY95	FY94
CLASS A MISHAPS	0	1	21	0	1	11	0	0	9	0	0	1
AIRCREW FATALITIES	0	0	8	0	0	6	0	0	2	0	0	0
* IN THE ENVELOPE EJECTIONS	0	1/0	16/1	0	1/0	5/0	0	0	11/1	0	0	0
* OUT OF ENVELOPE EJECTIONS	0	0	0/2	0	0	0/2	0	0	0	0	0	0

* (SUCCESSFUL/UNSUCCESSFUL)

CLASS A MISHAP COMPARISON RATE

(CUMULATIVE RATE BASED ON ACCIDENTS PER 100,000 HOURS FLYING)

ACC	FY 94	0	1.1	1.5	1.8	2.4	2.4	2.0	1.7	1.7	1.8	1.8	1.9
	FY 95	2.3	1.2										
8 AF	FY 94	0	0	0	0	0	0	0	0	0	0	0	0
	FY 95	0	0										
9 AF	FY 94	0	0	0	2.1	3.3	4.0	3.2	2.8	2.2	2.1	1.9	1.6
	FY 95	0	0										
12 AF	FY 94	0	0	2.0	1.6	1.3	1.1	.9	.8	1.4	2.0	2.4	3.1
	FY 95	7.1	3.6										
DRU	FY 94	0	14.9	8.6	6.7	11.2	9.5	7.9	7.0	6.3	5.7	5.3	4.6
	FY 95	0	0										
ANG	FY 94	0	1.9	2.6	2.2	2.7	3.7	3.2	3.4	3.5	4.0	3.6	3.3
	FY 95	0	0										
AFR	FY 94	0	0	0	0	0	0	0	0	0	1.4	1.3	1.3
	FY 95	0	0										
TOTAL	FY 94	0	1.2	1.7	1.8	2.3	2.7	2.1	2.1	2.2	2.4	2.3	2.3
	FY 95	1.3	0.7										
MONTH		OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP

* (HOURS NOT AVAILABLE)

Hey, You Attached G

Maj Marty Ogorzalek
HQ ACC/SEF
Langley AFB VA

The sickening feeling in your gut consumes all other sensations as you watch the fireball that a minute ago was the perfectly functional jet you signed for. Your surroundings seem surreal, the scene in front of you seems to be in slow motion, and you half wonder if this is really happening to you. A sudden sharp pain in your leg snaps you back to reality as you hit the ground and the horrible stench of burning aircraft fills your nostrils. Yes, unfortunately, this really is happening.

You had walked into a mission that was far more complex than you had expected and planned on. You felt behind the whole time, from briefing through step, start, taxi, takeoff, and ingress. Your SA never quite caught up with the demands of your tasking, but you were too stubborn to admit that you should terminate this one and head home for some instruments. You were so task saturated that you were lucky to get out alive. As you quickly review the events of today that led up to you having one more takeoff than landing, you wish there was a way you could start over. "Boy, I wish I would have checked the schedule last night to get a heads up on this one. I would have shown up earlier and did all the necessary planning. That would have allowed me more time to prepare mentally to execute this cosmic plan. I felt so rushed..."

Many of us have been there — done that. And until now, our good looks and uncanny luck have kept Murphy at bay. But I believe we often create our own luck by being prepared — the better I prepare, the luckier I get. So all of you out there who don't work at the squadron (and let's be honest), how well are you prepared when you step out the door? Do you know the important numbers, or will you count on your experience to get you by? When was the last time you read about fuel system problems in the Dash-1?

Many factors determine how much time you can or need to devote to mission planning, systems knowledge, reviewing updated procedures, regulations and training rules. You don't have the time that you used to have as a Lieutenant to sit around and absorb that stuff. Sure your bag of experience is full, but is that enough? As wing/group staff, you literally have a full-time job outside the cockpit. And in today's downsizing mode, manpower goes away faster than the work does, leaving everyone busier than before. Often, that leaves less time for other things — like preparing to fly. Current day stressors and distractors may be at an all time high, while supervision is stretched as thin as we've ever seen. Preflight planning might be cut short due to the enormous demand on your time from things other than flying.

Another problem with staff jobs is the good old Air Force evaluation and promotion system. It appears that you get rated on your staff performance and paperwork, not on your aviation ability. So commanders - where is that person going to put the majority of their time and effort if they want to be promoted? The same place you probably do. The flying staff

ys: Are You Ready to Hack it, Are you Prepared to Fly?

have less sorties a half in which to excel. I think we would all admit that flying fewer sorties can put you on the ragged edge of some proficiencies and currencies. Commanders - are your attached personnel scheduled commensurate with their present currency/ proficiency? How do you monitor this?

When our attached folks show up at the squadron, is it early enough to do a good check of the weather, NOTAMS, FCIFs, mission profile, lineup card etc.? More importantly - is there enough time to get themselves in the right frame of mind to fly? Can you totally disassociate yourself from the pressing staff problems and suspenses back in the office? Commanders -is there a squadron standard on show times before briefing to allow proper preparation? Is it really enforced, or sort of overlooked for some guys because they're good old boys or good old sticks? Do you have exceptions for senior officers? Do your flight leads know that you will back them up if they tell an attached flyer, who may be their senior, they're not prepared enough to fly the planned mission?

To the flight leads out there - do you ensure your attached guys are absorbing your briefing rather than just nodding their heads? Are programed step times adhered to in order to allow enough time for a thorough review of the 781, walk around, and cockpit preflight? Late check-ins and missed switches may be telling you that this pilot just isn't prepared to fly today.

My last thoughts on being prepared to fly have to do with the person who's smart enough to know when he or she is not ready for this one. Face it, there may be times when you are just not ready to fly. Does supervision truly support this individual if they cancel out or is the person the object of ridicule by putting them on the wimp list? Which do you think would be easier to do: explain an Ops cancel to the Wing King or tell some wife that her husband won't ever be coming home again? As we refocus on basic airmanship issues, adequate preflight preparation should rank up there as a fundamental checklist item accomplished every time we kick the tires and light the fires. ■

SAFETY AWARDS.....

How do you get one???

First things first! All ACC and ACC-gained units are eligible to participate in the ACC Safety Awards Program. All it takes is a letter signed by the unit commander. That's it! Easy, wasn't it?

Did you know that any one of the following acts make you eligible for an ACC award?

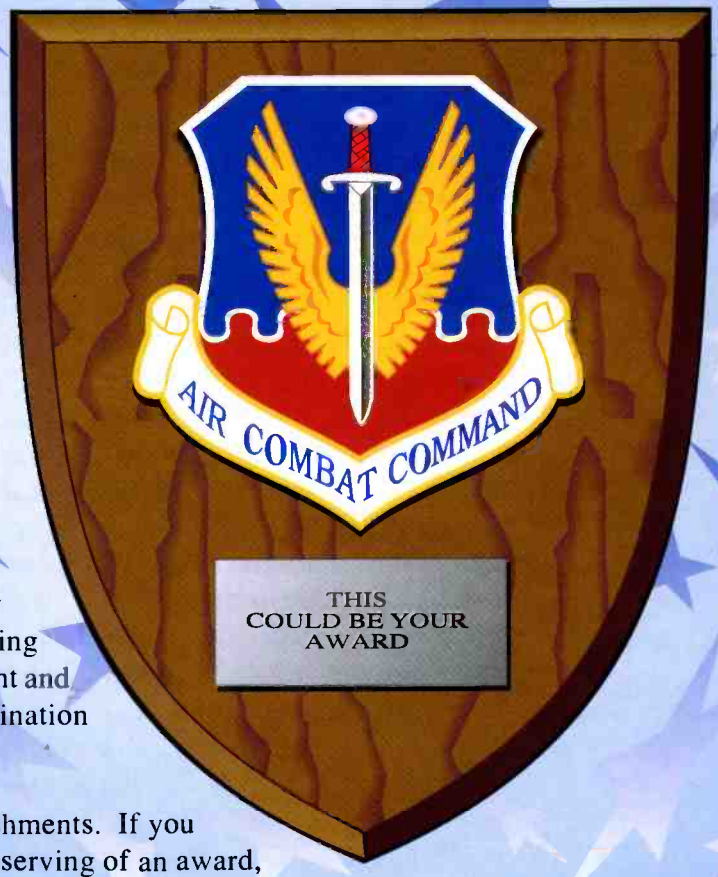
* Prevention or reduced injury to persons, aircraft damage, or loss of life.

* A one-time act in enhancing mission completion or minimizing mishaps.

* Significant contributions to mishap prevention in flight, weapons, ground safety; maintenance, custodial, medical, operations, information systems, etc.

* Development and implementation of a new policy, program, or idea that enhances the quality and effectiveness of the unit mishap prevention program.

* Display of skill and ingenuity beyond that usually expected with similar training and experience during an emergency or unusual situation or when foresight and prompt decisive action results in detection and elimination of a potentially serious or costly mishap.



Our objective is to recognize outstanding accomplishments. If you feel your action fits one of the above and you are deserving of an award, Just follow these next steps and you're halfway there.

1. Let your supervisor know what's going on and who did what in the area of mishap prevention.

2. Supervisors: Write up the nomination in letter format (see ACC SUP 1/AFR 900-26). Send the letter IN TURN to the Wing Safety Office, Wing Commander, NAF/DRU/ANGRC/AFRES Safety Office (as appropriate), then ACC/SEP.

When nominations are received at ACC, the Safety Awards process consists of five steps:

1. Nominations that are received by the first of the month will be considered at that month's board meeting (usually held the first Thursday or Friday in the month — depends on what day the 1st falls on).

2. Board members review submissions and vote on nominees, making recommendations to the Chief of Safety. Once approved, the Chief of Safety will send a status letter to the unit commanders NAFs/DRUs/ ANGRC/AFRES informing them of the winners.

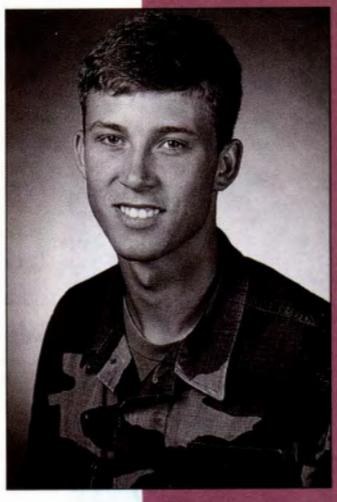
3. The winners are then submitted to the Editor of *The Combat Edge* for inclusion in the next month's magazine.

4. Letters are drafted and plaques sent to the engraver.

5. Once the winner letters are signed and plaques are picked up from the engraver, packages are prepared for shipping (usually a one-to-two day turnaround once picked up from the engraver) and they are on their way.

Now that wasn't too bad, was it? Just so you'll know, the majority of the time the write-up in *The Combat Edge* will appear before recipients get their plaque and letter. To prevent individuals from finding out first through the magazine, we encourage the commanders to notify the winners as soon as they get the first notification from the Chief of Safety. ■

FLIGHTLINE SAFETY AWARD OF DISTINCTION



A1C Scott R. King, 1 EMS, 1 FW, Langley AFB VA

Busy was the only way to describe the airfield that day. Our F-15s were surging and with a small break between takeoffs, I attempted to return to the Munitions Storage Area (MSA) to have the chaff and flare magazines reloaded. As I waited for clearance from the tower to cross the active runway, I saw a large bird get clipped by an F-15 wing during takeoff. The bird immediately started doing "donut type" maneuvers on the center of the active runway. I looked down the runway and saw other aircraft preparing for takeoff. Considering the possible consequences of the bird being sucked into the aircraft or hitting another aircraft during takeoff, I immediately got a patch to the tower and warned them of the situation. The tower halted takeoffs until I could clear the bird and alleviate the danger. As I approached the bird, I could see that it was a Red-tailed hawk. It had been severely injured by the aircraft. I ran after the hawk and tried to capture it. It was a little rough trying to get a hand on it, as it was spurring me with its talons and hitting me with beating wings, but I eventually restrained it. I removed the hawk from the runway and performed a "FOD walk" of the immediate area. Once I was sure the area was clear, I contacted the tower and informed them that the situation was under control. They thanked me and resumed flight operations.

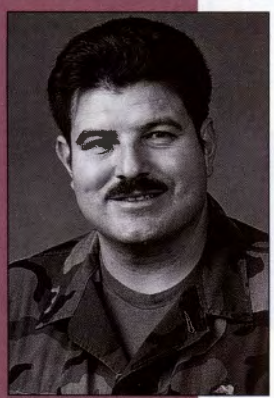
AIRCREW SAFETY AWARD OF DISTINCTION

Capt Kenneth B. Dorsey, Capt Randall R. Wiemer, Lt George J. Kochis, MSgt Richard G. Dittmer, TSgt James H. Spillman, SSgt James J. Baarda, 71 RQS, 1 FW, Patrick AFB FL

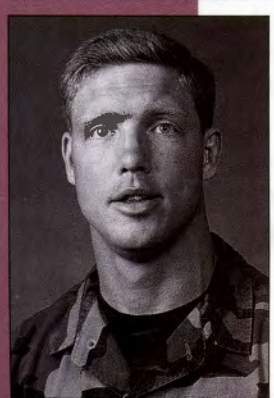
Capt Ken Dorsey and his HC-130 crew were returning to Patrick AFB at flight level 230, when their aircraft experienced a severe yaw to the right accompanied by erratic RPM indications on all four engines. After disengaging the autopilot, the pilots immediately deselected the propeller synchrophaser, which was using RPM inputs from the number three engine, while TSgt Spillman instinctively selected mechanical governing on all four propellers. This procedure restored normal RPM indications on all engines except the number three engine which was quickly winding down through 60 percent RPM and showing a significant loss of torque. Capt Dorsey directed Lt Kochis to perform an emergency engine shutdown while ensuring SSgt Baarda scanned the number three engine to confirm that the propeller had indeed feathered.

When approximately 40 miles from landing, the number four engine low oil quantity light illuminated. The crew kept the engine running until the gear box oil pressure slowly began to drop. Once again the crew performed an emergency engine shutdown and began a shallow descent into Patrick AFB. The airplane was now experiencing strong asymmetric thrust due to two engines out on one wing, and was relying on only one hydraulic system for all flight controls, landing gear, and flaps. The pilots and engineer thoroughly reviewed fuel dumping procedures, landing with two engines inoperative, and go around possibilities while MSgt Dittmer coordinated the emergency with applicable agencies. Capt Dorsey executed a flawless two engine landing using nosewheel steering to maintain directional control during landing rollout.

Post flight inspection revealed that the number three engine's tach generator had failed causing erroneous inputs to the propeller synchrophaser and fuel compensator. In addition, the number four engine's oil pressure compensator valve had failed allowing the oil to be vented overboard. The timely actions of this crew in handling a rare and critical emergency prevented the loss of a valuable Air Force resource.



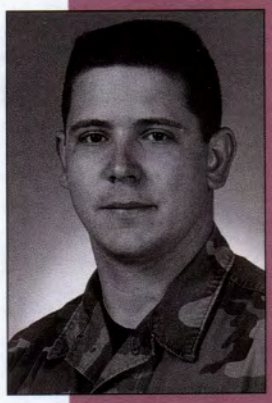
CREW CHIEF EXCELLENCE AWARD



TSgt Roldolfo Platero, SrA Steven A. Holder, 34 FS, 388 FW, Hill AFB UT

During an engine run up inspection to check for smoke in the cockpit, Senior Airman Holder noticed the ring and steamer from the nose wheel safety pin was detached and hovering dangerously in front of the aircraft's intake. Airman Holder immediately told Sergeant Platero to shut down the engine. Airman Holder's keen awareness, coupled with Sergeant Platero's quick reactions prevented the ring and streamer from being ingested into the aircraft's intake.

GROUND SAFETY INDIVIDUAL AWARD OF DISTINCTION



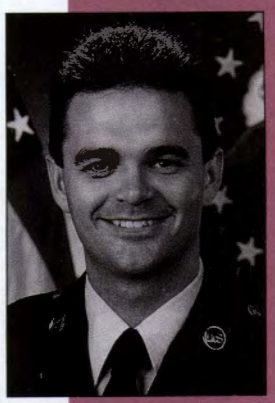
SrA Eric A. Morgan, 668 BS, 416 BW, Griffiss AFB NY

During the late evening hours, SrA Morgan was returning to his quarters from his duty section. While traveling north on Wright Drive he noticed an electrical transformer "sparking" across from the Base Legal Office. He immediately ran into the Law Enforcement Desk located in an adjacent building and reported his observation. Law Enforcement dispatchers contacted the Base Fire Department and had police patrols block traffic from the immediate area.

Investigation by emergency response personnel revealed an underground electrical vault near the legal office had flooded and a high voltage cable running through the vault had shorted out. Insulation around the high voltage wire had cracked allowing direct grounding of the electrical source. By the time the response forces were able to cut off the electrical power source, the ground near the underground vault had light tremors and the water in the vault was at boiling temperature!

Airman Morgan's "heads-up" situational awareness and prompt reporting of this incident prevented serious additional damage to the base electrical system and averted a potentially devastating explosion or fire. Well Done!

WEAPONS SAFETY AWARD OF DISTINCTION

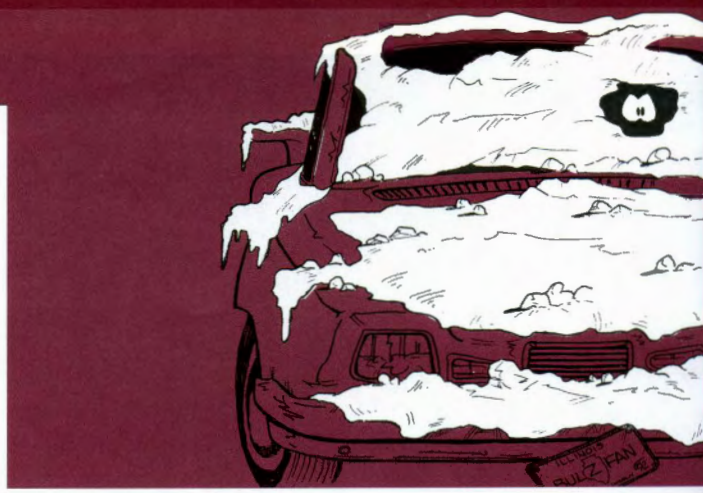


SSgt Thomas D. Frazier, 59 FS, 33 FW, Eglin AFB FL

Sergeant Frazier was assigned the routine task of performing gun system after fire inspections on four F-15 aircraft that had fired for the day. Little did he know, this time it was far from routine. While he was inspecting the first of the four gun systems, he detected something out of the ordinary. He discovered that the gun system's ammunition conveyor assembly was incorrectly installed in the aircraft. Normally, the conveyor assembly's two retaining brackets slide into a rail in the aircraft locking the conveyor in a stationary position. In this case, both of the conveyor's brackets were not installed in the rail. This unrestrained condition would eventually cause the conveyor to malfunction due to the high speed of the gun system during operation. Recognizing this as a potentially catastrophic situation considering the explosive nature of the ammunition, Sergeant Frazier immediately notified the flight line expediter of his discovery. An inspection of all squadron aircraft revealed an additional conveyor assembly improperly installed in an aircraft. If these discrepancies had gone undetected, the conveyor assemblies would have malfunctioned from the stress of continued gun system operation. Sergeant Frazier's quick detection of this abnormal condition and his direct efforts in correcting these discrepancies prevented potential gun damage, damage to or loss of an aircraft, and loss of life.

Artwork c
Sergeant Darby Perrin • P.O. Box

tributed by:
0233 • Midwest City, OK 73140-0233



SECONDS FOR SAFETY

SMSgt Brian D. Prucey
2 BW/SEW
Barksdale AFB LA

The cold December morning air stung my face like a hard slap. The morning weather report said the temperature was 21 degrees, and a thick layer of frost on my car revealed the truth of that report. I decided to start the car and allow the defroster to clear the windows while I went back into the house for another cup of coffee. Seven minutes later the windows were clear and I was on my way for the 30 minute drive to the base.

The drive was routine for most of the way. The roads were clear and traffic moved at a pace as brisk as the air. Some drivers seemed to be in more of a hurry to get to work than others. A radio news program captured some part of my attention. Life was good.

Ten minutes into the drive I entered the freeway. After merging onto the freeway, I noticed traffic trying to merge at the next exit ahead of me. I signaled and moved into the left lane to courteously allow traffic to enter the highway. Two cars merged ahead of me and a third entered the highway right along side of me. Then, to my horror, that car continued to move left into my lane — on top of me! I stepped on the brakes and blew the horn. The other car pulled hard back into the right lane.

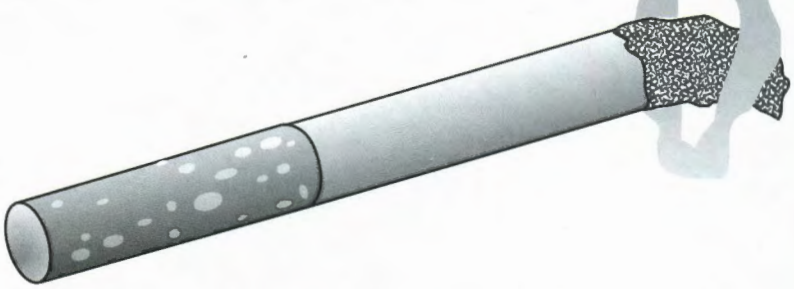
As my heart rate slowed, I increased my speed until I was again along side of the other driver. Just then, the icy window rolled down and a young woman looked at me apologetically and mouthed the word, "Sorry." It was then that I noticed that all the windows of her car were iced over. She was trying to navigate a major highway by looking through an area no larger than my hand scraped clean on her windshield. Some call it "Porthole driving."

It was all I could do to keep my anger in check as I thought about what could have happened had I been less attentive. It was only a week before Christmas. I didn't have all my shopping done yet, but it wouldn't have mattered if I was dead or seriously injured. Christmases present and future could have been tragically altered — just for a lack of 7 minutes. All that young lady needed to do was spend 7 minutes allowing her car to defrost. No effort really.

This episode caused me to think of other tragedies that could have been avoided if someone had taken the time to be safe. Sometimes, it's only a matter of seconds; like 10 seconds to put on a life jacket, 5 seconds to check a smoke detector, or 3 seconds to put on a seat belt. No one should die because they wouldn't take time to be safe. Is your life worth 3 seconds? ■

MISSING ASH

Mr. Ricke A. Moore
SWADS/SEG
March AFB CA



SMOKING - a subject which many people don't care to discuss. However, I just love to look it up in the dictionary. The true definition of smoking is: the visible vapor and gases given off by a BURNING OR SMOLDERING substance, especially the gray, brown, or blackish mixture of gases and suspended carbon PARTICLES resulting from the combustion of wood, peat, coal, or other ORGANIC MATTER. BURNING OR SMOLDERING ORGANIC MATTER. I think

that says it in a nutshell, don't you?

This is a habit that I don't quite understand. Why would anyone want to intentionally suck in BURNT OR SMOLDERING ORGANIC PARTICLES? It's bad enough that everyone complains about the smog. Smokers could save all that money they spend. If they just walk outside and breathe, they would get the same effect.

I was told as a Safety Manager that personnel smoking was none of my business. If a person or persons are smoking while driving a government vehicle, or smoking when standing by a fuel cell hangar, or are smoking and possibly causing a fire, explosive, or other safety hazards, then I guess it becomes the business of the Safety Office.

Smoking as a safety hazard - case in point: An individual was trying to sleep one night in a very posh hotel. He could not get comfortable for some reason. In fact, the mattress just didn't feel quite right. This poor tired person decided to pull off the sheets to see what was causing his discomfort. To his surprise, he found a large hole burned into his nice warm bed, or shall we say his previous nice warm bed.

Or, how about the avid smoker who slides his fingers down that dangling cigarette which, unbeknownst to him, has stuck to his upper lip. Suddenly he smells that weird scent of burning flesh and a second later feels that searing pain between the fingers of his hand. He jumps up like a total fool, falls over his chair and rushes madly for the restroom. Who knows where that cigarette landed?

But my all time favorite story is THE CASE OF THE MISSING ASH. My dear aunt was a retired school teacher, and like many people she liked to drive a very large vehicle (a land yacht). On this joyful day she had herself, my mother, grandmother, two friends from England and me in her pride and joy - her Caddy.

Now while my aunt was driving, she had this nasty habit of smoking, scrounging through her purse, and trying to drive, all at the same time. I was in the back seat with our friends from England, and the others were in the front. We were very happily motoring down the main boulevard of this small town, known as "Vegas." My aunt decided to light up, so she did. Now my aunt has another bad habit, she talks with her cigarette in her mouth. So auntie starts talking. Well, one of our friends noticed that her ash was missing and asked if she had put her cigarette out? Well, as you may have guessed, the search for the MISSING ASH ensued. With total disregard for what she was doing at the time, my aunt went on the most wild and frantic search and destroy mission that I have ever been blessed to witness. She started screaming at the top of her voice, "OH MY GOD! OH MY GOD!" She began to rapidly slap her lap, jumping up and down hitting her head against the ceiling of the car. It was at this precise moment that her Caddy made its ninth and final swerve before climbing over the main center divider and proceeding down the other side of the street in the wrong direction. Much to the dismay of the innocent bystanders and passengers, her car decided to take no less than 90 percent of the sidewalk, curb and gutter. Realizing what was happening, she sat down grabbed the steering wheel and made a sharp right turn across the two oncoming lanes of traffic over the main center divider again and put us back into the main stream of traffic. By this time, she was in extreme pain and still had not found the MISSING ASH. Somehow she was able to get the car stopped and immediately exited the car doing a dance that I had never seen before. The end result was a burnt hole in the front of her dress eight inches in diameter, melted underwear, a destroyed front seat and five people anxiously looking for a restroom. Shortly after this enlightening episode my aunt quit smoking and we have never driven with her since.

The hazards of smoking do exist, and everyone in the Air Force must take appropriate measures to ensure a safe working environment for every person. Don't let this bad habit kill you or someone else. Be careful where, when and how you smoke and dispose of your cigarettes. Be observant of your fellow workers, loved ones and friends. Please care about each other. Remember, a SAFETY ATTITUDE IS A TRAINED ATTITUDE. ■

THUMBS UP!

MSgt Michael Mlodzik
Superintendent, F-16 MRT Course
Luke AFB AZ

During my tenure on operational flightlines, I've seen numerous mishaps, but until recently I never realized how essential steel toe safety boots could be.

Setting the stage, a highly skilled individual who works for me was conducting informal on-the-job training with 3 newly assigned crew chiefs. The task at hand was simple — aircraft preparation for towing — but out of the blue, I was faced with a catastrophe. My best technician, the trainer, was jumping around on the flightline holding his right leg. At first I thought he had hit his shin on the towbar. However, when I saw him fall to the ground screaming, I knew things were a lot more serious. Rushing to his side, I could see blood oozing out through the vent holes in his right hot weather boot. There was no physical damage to the boot; but when we unlaced and tried to remove his boot, we found the situation more acute than first imagined.

After emergency medical crews arrived and took him to the hospital, I interviewed the trainees for a detailed synopsis of what had transpired. They told me that the trainer was showing 2 of the 3 trainees how to hook the towbar to the aircraft. He was kneeling under the nose of the aircraft showing them how the towbar scissors adapter interfaced with the aircraft nose wheel. When both trainees understood the towbar connection concept, he signaled the third trainee, who was manning the towbar eye adapter, to raise the towbar up. The trainer used his right hand with his thumb extended and motioned up 3 or 4 times. The trainee responded to the trainer's signal and rapidly raised the towbar eye adapter up, causing the scissors adapter to slam to the ground. However, before the towbar hit the concrete, it hit the tip of the trainer's right boot.

The towbar operates like a teeter totter, with the transportation wheels as the central balance which allows one end of the bar to pivot up while the other end goes down. In other words, when one end is raised the other end goes down and vice versa. The nonverbal communication signal between the trainer and trainee was confusing and misunderstood. The trainer signaled the trainee to raise the scissors adapter up; however, the trainee understood that he wanted the towbar eye adapter raised. This failure in the communication process hospitalized one individual and horrified one new crew chief. Through my years of experience, I have found dealing with newly assigned crew chiefs a real challenge and thrill. However, you must ensure they clearly understand their role in each task and all the hand signals used in a noisy environment. I'm sure my trainer now understands the importance of spelling everything out as 3 of his toes were split open and his toe nails permanently removed because he didn't ensure each and every trainee knew his responsibilities in performing the task. This misunderstanding left me without a trainer.

When I think back to this situation, I recall that the steel toe safety boot issue is never ending. It seems as if every couple of months someone will raise the issue and then it's gone. The thought comes to mind more often now because of my trainer's unexpected misfortune. Wearing steel toe safety boots is a supervisor's call. You have a responsibility to your subordinates to provide the necessary equipment to prevent injuries. Lead by example! I wear my steel toe safety boots and I religiously tout their importance; ensuring each and every one of my subordinates wears theirs. You can't afford a mishap. ■


Fleagle
MAN! THIS TEMPERATURE IS DROPPING FAST. IF I DON'T GET DOWN...
I COULD HAVE ME A BIG PROBLEM.
TINY, MY MAN. YOU IS SURE MAKIN' A COOL FASHION STATEMENT. HEH! HEH! HEH!
OH NO...
HARRISON
PUNCH!
TH' BIG GUY'S A LITTLE TOUCHY 'BOUT THE PROBLEMS OF ICING.
IT APPEARS FLEAGLE DIDN'T KNOW THAT.

1994 INDEX

The folloing index of articles and artwork is provided in an effort to make it easier for our readers to tap the reservoir of knowledge contained in *The Combat Edge*. We receive numerous requests throughout the year concerning past articles or artwork. Many times, the requests are quite vague concerning title, author, subject or issue and often necessitate laborious research through past magazines. This index was compiled so that *The Combat Edge* could continue to be a valuable source of information to our readers.

Index entries are listed alphabetically by title in the following format:

–Ed.

TITLE
Subject synopsis
Author/Artist – Issue, Safety discipline (if applicable)

We solicit your comments and suggestions concerning the index (or The Combat Edge in general) so we can better serve our readers. Send us a note or give us a call. Our address and phone number are inside the front cover.

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the Complacency BUG

Anonymous

Last night I almost died. I almost became the fourth person to smear an F-16 into the ground while doing a night loft. Was it a targeting pod loft? No, not really but in this case, the very fact that it wasn't a targeting pod loft led me into the sequence of events that nearly ended tragically.

It was a night LANTIRN sortie and I was leading a four-ship. I was current, but it had been a while since I had done any TFR or night range work. The plan included a TFR low-level to a loft on a SAT target, then to the range for lofts and direct attacks (1 & 2).

My jet failed two LANT checks, so I stayed at the MSA at the push. On the SAT attack, I did a fly-up to an LGB while #2 did a loft behind me; then we pressed to the range.

Since I was not TFR capable, I reverted to my non-LANT habit patterns. Straight BDU lofts, 2,000 feet AGL on the run-in (our restriction). I had done a lot of TFR lofts in the past year, but only a few the old way. The old way should be simpler, right? That's where complacency set in, one of the biggest killers of experienced pilots in the history of the airplane.

I did my 2,000 foot run-in, slewing on the OAP with a little old-fashioned radar work; then I switched back to the targeting pod. Up for the loft, nice and easy, about a 15 degree release. Off left, nice and easy, no need to yank the nose down, after all, I'm not TFR. Oh yes, have to safe it up. Eyes in cockpit for the master arm switch, radio call - look there's the targeting pod, where's the target? Oh, I'm still in OAP. Reach down to the MFD and switch to target. Then it hits me — I'm low to the ground at night, and I have absolutely no idea what my aircraft's attitude is.

My tape review revealed that after the loft, my nose passed through the horizon in 90 degrees of bank, at 5,000 feet AGL, 420 knots. Eight seconds later, when I began the recovery, I was 33 degrees nose low, 120 degrees left bank, at 3,200 feet.

Fortunately for myself and the Air Force, I realized I was disoriented early enough to recover. Of course, my first reaction was to look outside; but I don't remember recognizing a discernible horizon. Stars and ground lights really do run together when you're disoriented. The HUD was right there and I remember seeing left bank and nose low, so I rolled right and started pulling as I passed 90 degrees of bank. I don't remember if I cross-checked my attitude indicator, but I did look at the altimeter. I remember thinking of bailing out but I saw -30 degrees of pitch in the HUD at 3,000 feet and decided I could make it.

My tape also showed that at where I believe I initially realized I was disoriented, I actually overbanked slightly before recognizing my attitude and beginning the recovery. I pulled 7.2 Gs on the recovery and was wings level at 2,270 feet 3 seconds from the initial reaction. I was very surprised I was not lower, but that is a testament to solid unusual attitude recovery procedures.

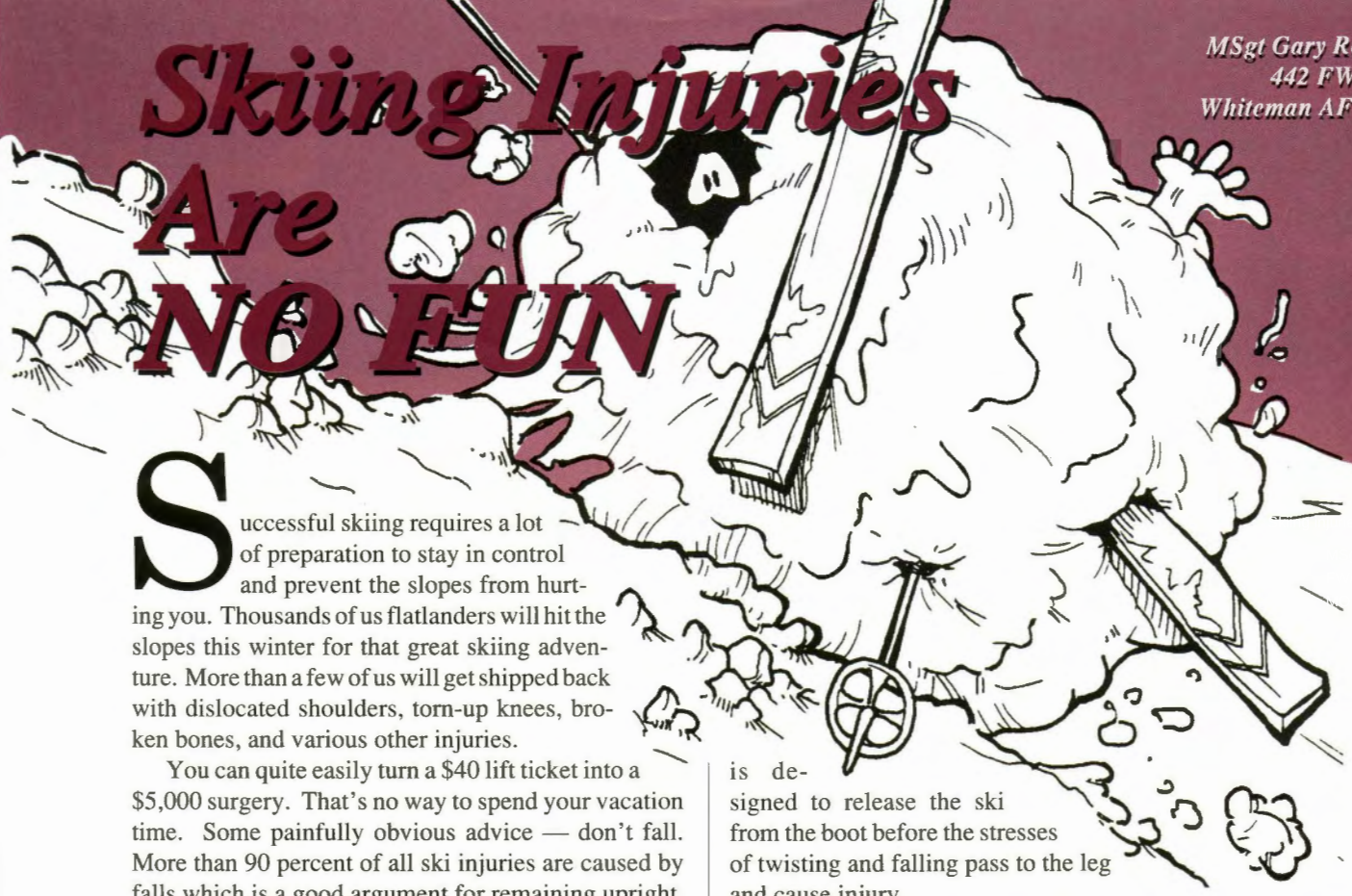
If you've never been there, pray you never experience the feelings I went through in tiny fractions of a second. Not panic, more like a combination of dread and disbelief that I had put myself into a situation that I might not survive. During the recovery, I actually thought of the mishap reports of similar situations leading to others' deaths, and that I might be another mishap report myself.

How did I get myself into this situation? As I stated, complacency was one of the big reasons. The insidious nature of my particular chain of events could have led even the most experienced pilot into a similar situation. As LANTIRN pilots, we get a sense of security using TFR at night. Don't let that lull you into complacency. Also, the thought that I was violating a training rule never even crossed my mind. After all, I wasn't slewing the targeting pod; it was there and I was just looking at it. That wonderfully space-stabilized picture is an enticing attention-grabber. The new feature that cuts out the targeting pod video below a preset altitude when out of limits is a great addition, but you have to be using TFR for it to work. Obviously a big lesson learned there for me.

I'm very glad I'm still here to share my experience, and I hope this story shakes the complacency bug off of you like it did for me. ■

Skiing Injuries Are NO FUN

MSgt Gary Reniker
442 FW/SEW
Whiteman AFB MO



Successful skiing requires a lot of preparation to stay in control and prevent the slopes from hurting you. Thousands of us flatlanders will hit the slopes this winter for that great skiing adventure. More than a few of us will get shipped back with dislocated shoulders, torn-up knees, broken bones, and various other injuries.

You can quite easily turn a $40 lift ticket into a $5,000 surgery. That's no way to spend your vacation time. Some painfully obvious advice — don't fall. More than 90 percent of all ski injuries are caused by falls which is a good argument for remaining upright.

As it turns out, many skiers simply don't make the preparations that could keep them on their feet. Get in good physical shape; use high quality, up-to-date equipment; and employ some common sense to remain in control on the slopes.

Unlike the old ski movies, in which the skiers hobbled around the lodge in leg casts, the injury of choice these days is a ligament tear in the knee. Such tears are epidemic on the slopes and can require surgery to properly repair. The anterior cruciate ligament and the medial collateral ligament are most at risk. Unfortunately, these ligaments cannot be strengthened with exercise.

What you can do before your ski trip is build up lower body strength to help avoid the predicaments that lead to falling and twisting. David Smith, a medical director of Sports Care at Shawnee Mission Medical Center, also advocates aerobic conditioning. Without good heart and lung capacity, fatigue on the slopes will come sooner and will translate into mistakes and falls.

No matter how prepared and careful you are, from time to time you still will find yourself losing your balance and heading for a fall. One tip, try to keep your skis and legs together as you go down. The idea is to hold twisting to a minimum. Also, you don't want to fall on a fully bent or fully extended knee.

The American Orthopedic Society for Sports Medicine recommends you pay special attention to your ski equipment. The most important item is the ski binding. Nearly 50 percent of all ski injuries are related to improper performance of the bindings. The binding is the mechanism that holds the boot and ski together. It is designed to release the ski from the boot before the stresses of twisting and falling pass to the leg and cause injury.

Old, worn, or dirty boots, bindings, and skis can cause the binding function to fail. Skiers should always have their bindings checked by professional, certified ski shop personnel. In addition, test your bindings to make sure they release properly each day before going to the slopes. Ski equipment shops sell several types of bindings. Some are quicker to release than others. Beginning skiers and those with knee injuries should choose bindings that release in as many directions as possible.

The medical society makes several other suggestions about equipment:

* Boots. Skiers have the temptation to loosen the boot that is causing pain. The result can be loss of control. Instead, take the boot to a ski shop to have it modified for improved fit.

* Skis. Beginning skiers should use relatively shorter skis for better control. Everyone should be aware of the sharp edge on skis. Lacerations from skis account for up to 15 percent of all ski injuries.

* Ski poles. "Skier's thumb" is an injury to the ligament between the thumb and forefinger. It's the most common upper extremity ski injury and generally occurs while holding onto a ski pole during an accident.

Finally, the less tangible "judgment factor" plays a major role in falls and collisions. As a young airman stationed at Lowry AFB CO, I can personally relate to this factor. Males between the ages of 18 and 26 suffer the most injuries because they take the most risks. As a member of the age group many years ago, I can describe these skiers as a "dangerous mix of testosterone and adrenaline."

Common sense ought to keep skiers from "tree bashing," the practice of heading off the course for a game of dodging trees; but some daredevils do it anyway. Skiing on slopes beyond your ability is an invitation to injury. I still remember the pain and the stupid remark I made after getting injured, "Well, my buddies coaxed me down the black diamond." Do not allow this to happen to you. ■

Culture Sh

Lt Pat DeConcini
ANGRC/SE
Andrews AFB MD

In The Beginning

In October of 1992 Major General Shepperd, Director of the Air National Guard, called his Director of Safety, Col Nielsen, and asked him to attend a briefing given by Lt Col Groben, a maintenance officer who had served on four Class A mishap investigation boards. A group of senior officers listened as Groben explained a unique theory he had developed about mishap prevention. Col Nielsen recalls, "For many at the briefing this was a completely different approach that was outside the normal acceptable boundaries of mishap investigation." Nielsen and the others listened cautiously as Groben explained that many recent mishaps occurred not because an individual forgot to perform a required inspection or a pilot violated a regulation or procedure. Instead, he argued, there were dysfunctional **unit cultures** that allowed the errors to happen, and these cultures were the root causes of the mishaps. Nielsen remembers: "I was a little skeptical at first, but I kept listening; and the more I heard, the more it made sense to me. After the briefing we decided that if we really have a true quality environment, we should at least examine the idea and see what our customers in the field think."

It was agreed that the ANG safety office would take on the project to evaluate its potential. Nielsen sent Groben to two volunteer units to evaluate their cultures. Nielsen explains: "We then surveyed these units and found out that the program was very well received. Gen Shepperd agreed that the program had merit, so we decided to continue." It is now two years later and the program has been taken to almost 50 Air National Guard units and one Army National Guard unit. After each visit, a survey is given to the unit commander with the results mailed to the ANG safety office. Col Nielsen says: "Most of the surveys contain comments such as: 'best program yet for units,' 'every unit needs this program,' 'thanks for a program that is for us.' The units realize that this program is for them to assess their unit culture. The results are confidential and are not given to anyone outside the unit including the ANG safety office which sponsors the program." Nielsen attributes much of the success to the non-retributional nature of the program and gives great credit to Gen Shepperd for his long-term vision and ability to see beyond the present paradigm. Nielsen explains: "A program like this exemplifies the quality principles that tell us to step outside of our normal boundaries and imagine new ways of doing business. We know that if we take chances on a program of this type it could fail, but if we are unwilling to accept that failure is possible, we will limit our growth and learning. Sometimes risk and uncertainty are necessary to provide for a continually improving organization."

What's In A Name?

In the early stages of the mishap prevention workshop, many commanders provided feedback indicating that the name, Accident Prevention Paradigm Workshop, was inadequate and misstated the scope and impact of the process. As a result of this feedback, Lt Col Groben adopted a new name and the following foundation statement: *"An effective safety program must exist on a foundation of Integrity, Trust and Leadership created and sustained by effective communication."* The name of the program is: The Leadership Culture Workshop. Groben says, "While integrity is the bedrock of a sound safety program, communication is the medium through which integrity is created." The workshop examines the existence of trust, integrity, leadership and effective communication in an organization. The workshop results are the culmination of a deep inquiry into the workings of the unit far beyond the scope of traditional safety oriented examinations. Traditional avenues of review are essentially compliance based. That is, does a unit do what they're supposed to do, and do they refrain from doing what they're not supposed to do? The workshop process does not focus on these compliance issues. Rather, it examines the foundation of compliance which is integrity. Groben explains: "The issue then shifts

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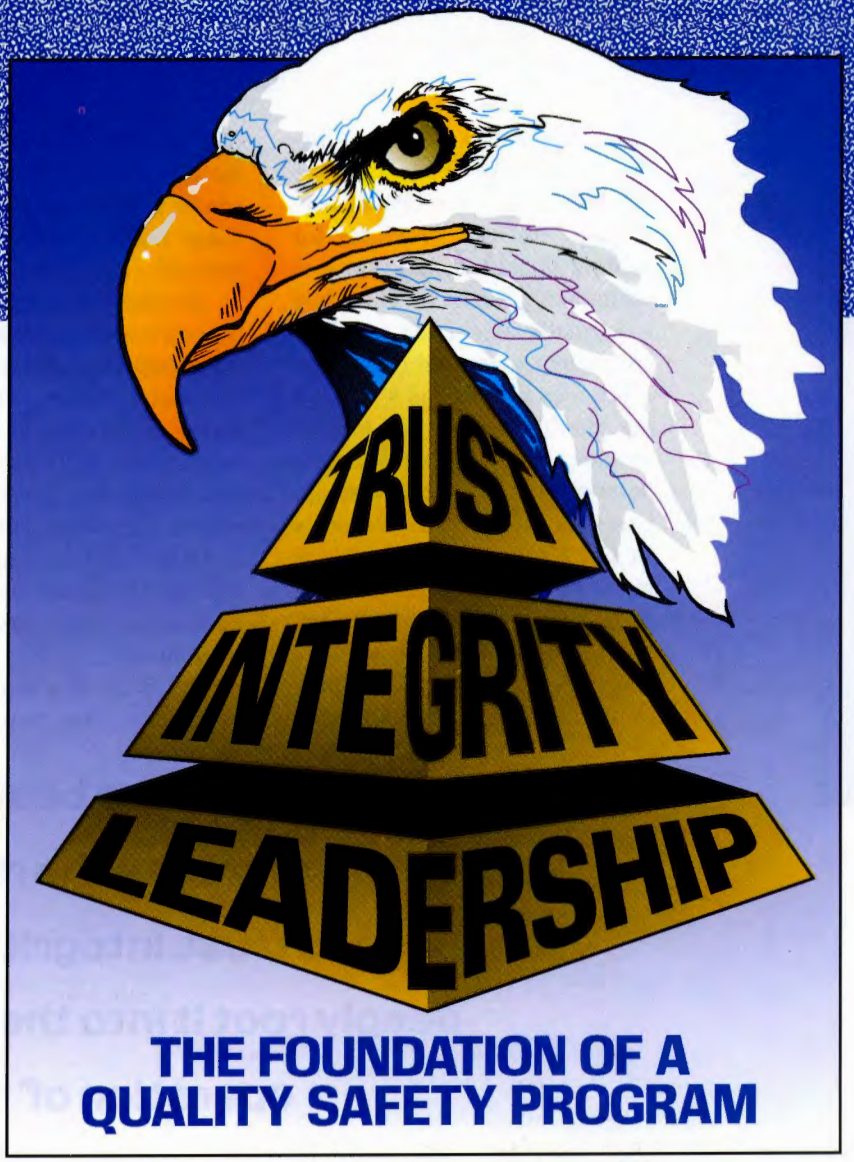

from **what** was done wrong, to **why** did it really happen? That is, what systemic or attitudinal deficiencies exist that allowed the anomaly to occur, and could those deficiencies rear their ugly head again if not properly resolved?" It only takes one breach of integrity when "no one's watching" to overshadow hundreds of successful Stan/Eval and QA performances. There are several recent examples where the root cause of the mishap was that the crew did not fly what they said they would fly, constituting a breach in integrity. Groben claims that current Safety Investigation Board (SIB) guidelines and procedures do not address this fundamental issue — leaving the door open for repeats. The current name, The Leadership Culture Workshop, is descriptive of the processes and results which are creating a shift from the traditional compliance view of safety to one with culture as a root issue.

Pitfalls

The lights are on, but no one's home. The existing system makes the commander responsible for safety, with a Chief of Safety to implement and manage the program. Groben describes: "The right person for this job is someone who demonstrates integrity. The effect of filling this position with the wrong person is important from a cultural aspect. Because of the high visibility of this position, unit personnel are aware of the actual performance of the Chief of Safety. Unit members, both enlisted and officer, see what's happening and make judgments about what the commander perceives as a priority and what he/she does not. These judgments essentially run along the lines of *"If it's not important enough to place a competent, capable person as chief of safety, safety is not very important."* As Groben explains: "The failure of commanders to install an accountable and capable individual as chief of safety constitutes a breach of integrity readily visible to all unit personnel. That breach spreads and becomes the standard for the unit. If problems channeled through the safety office are not handled properly, the culture of safety in the unit will deteriorate. Safety as an effective culture in the unit will be diluted because the commander did not create a culture that places emphasis on it. Saying safety is important will not produce the foundation for an effective safety program. Actions that mirror those words will."

Leadership Style And Transition

Establishing the right culture many times means altering the existing culture, and change of any kind is often resisted. The culture of a unit may have developed over many years and its roots may be very deep. On the other hand, some unit cultures are newly developing, undefined, or just not entrenched as deeply as others. If cultural transition is necessary, it will probably be much easier in the non-entrenched situation.

Another important factor which may effect cultural change is the style of leadership which created the existing culture. As with cultures, there are many dif-

ferent leadership styles and different types of leaders. One leadership style that creates particularly difficult problems for cultural change is the fear and intimidation method. This style is normally associated with micro-management, arbitrary and capricious actions and a "do as I say, don't ask why, and like it" attitude. From the commander's point of view, this style may appear to be effective. However, as Lt Col Groben explains, this is not always true: "The reflection of this approach eventually begins to manifest itself in negative ways. People stop making independent decisions and seek approval before acting because they are unable to distinguish between situations when approval is needed, and when it is not. Honest opinions are not shared because they are not well received. Lateral communication and coordination begin to suffer because people are too busy protecting themselves." The fear and intimidation approach permeates the organization and becomes institutionalized at all levels. When a leader attempts to transition to a more empowering style, or a new leader takes the reins, the inheritance of the old style may remain in place for a long period of time in spite of substantial effort to the contrary. Communicating honestly and creating trust where there was none is difficult and risky for people. Since the path of least effort is to continue with the existing behavior patterns, it can be extremely difficult to dislodge institutionalized behavior patterns.

In order to change the culture, the unit members and commander must first identify what the culture is and what type of leadership styles exist. This is where The Leadership Culture Workshop comes into play. Lt Col Groben's system identifies the unit culture and leadership styles and provides a forum for honest and frank discussion in connection with mishap prevention.

Lt Col Groben believes: "As a commander, the best thing you can do for your unit is to create the right culture, one that emphasizes trust, integrity and leadership, and deeply root it into the very fabric and operation of the unit. Then you will know that as time goes by and the torch is passed, your legacy of professionalism and safety will live on."

"As a commander, the best thing you can do for your unit is to create the right culture, one that emphasizes trust, integrity and leadership, and deeply root it into the very fabric and operation of the unit."

Essential Elements

INTEGRITY. What does this mean to Air Force pilots? Integrity is the most important element because it encompasses the core values that the other elements revolve around. Webster's dictionary describes integrity as "firm adherence to a code of...values." According to Groben, "If a pilot has the opportunity to violate a rule with little or no apparent chance of being caught, but decides not to because there's a rule prohibiting it, that's integrity." In this example, the reason why the pilot doesn't break the rule is not because he/she is afraid of repercussions, but because the pilot understands integrity and believes in following the rules. What exactly is the application of integrity? Why should we follow some training rule that in a situation really isn't important or doesn't apply? Because, although the rule might not apply, the value of following rules does. Groben uses a hypothetical example and explanation to make his point.

Squadron pilots regularly violate the borders of a particular MOA. ATC doesn't usually complain because airline and civilian traffic is rarely in the vicinity of the border excursions. As a result, when a pilot violates the MOA border, there is little or no peer accountability and no consequence back at the squadron. In fact, there is no mention about it in the post-flight debrief because, in practice, there is no potential for harm. As the months and years go by, pilots in this squadron become accustomed to, and unafraid of, frequently violating MOA borders. Then, while deployed to a relatively unfamiliar training sight, Capt O, as part of a large package, shows up late to the mass brief. He feels bad about being late, but after all, "some guys are late to every brief back home and nothing happens to

them." When our nocturnal pilot arrives at the brief, he squeezes into the back of the room and tries to spot his flight leader. The local briefer is just finishing a discussion on local procedure and airspace restrictions as our pilot finds his flight leader and gets all his paper work. Part of the local brief the pilot missed was a discussion about the importance of not violating the western boundary of the MOA because airline traffic uses it as a transition route into the local commercial airport frequently flying very close to the western boundary of the MOA.

The mission proceeds as planned and our pilot is involved in several multi-bogey engagements. As he pulls off from a guns track and prepares to return to his cap point, he realizes that a right turn will be much shorter than a turn to the left. However, he thinks that if he turns to the right (the short way) he might go out of the MOA, but he's not sure. This is where the subconscious part of his brain says "don't worry, we fly out of MOAs all the time and no one even notices." So, as he turns right and looks over his shoulder for other bandits, he crashes into a small commuter airliner killing all 18 aboard. The pilot ejects and receives a broken ankle on landing and gets to tell the story for the rest of his life. Investigators and commanders completely miss the point and prompt a new FCIF and training focus on maintaining area boundaries.

But, as Groben explains: "Area boundaries are not the real issue. The real issue is that the culture in the squadron allows its pilots to become accustomed to violating rules. A philosophy that allows rules to be broken when it's 'OK' leads to an opportunity to break a rule at each decision point. The system created that rule for a good reason and based it on reliable data and real life eventualities. When you understand this idea and you follow a rule not because you're afraid of getting caught, but because you understand the 'big picture,' congratulations. You have INTEGRITY."

Groben believes integrity by only a few is inadequate, which is why peer accountability is necessary to ensure all members of a squadron have the same philosophy. Does this mean we all have to become policemen of each other? Absolutely not! What it means is that when you violate a rule, or you see one violated, it is **recognized** as such and some sort of corrective action is taken. This action might only be a short mention in the debrief: "Hey, you went a little below your minimum release altitude; watch out for that." Or self recognition: "I should have called 'blind' immediately instead of waiting." These small actions by themselves might not prevent a mishap, but the cumulative effect of demanding the best out of yourself and your peers definitely will.

TRUST. What does this mean to Air Force pilots? Again, Webster's dictionary defines trust as "assured reliance on the character, ability, strength or truth of someone or something." As pilots we trust and rely on each other to carry out certain tasks. Without mutual trust we cannot do our job; it's that simple. Time cannot be wasted worrying about whether other flight members are following the rules. The less time wasted on such concerns leaves more time available to do our main job. In simple terms, the more we trust each other, the better and safer we fly. Pilots must trust that other pilots will attempt to protect them from harm, give honest and constructive criticism, accept criticism and act like professionals. We need to be able to trust our training, instructors, commanders and, most importantly, ourselves. Lack of trust can create a nagging feeling of uneasiness which could prove disastrous in the demanding environment of military flying. As Groben states, "Trust comes from proven, consistent, reliable behavior and the knowledge that everyone is singing off the same sheet of music; and most importantly, the knowledge that everyone has integrity."

LEADERSHIP. What does this mean for Air Force pilots? For integrity and trust to exist in a unit the commanders must support and actively promote the right philosophy. If the commander doesn't demonstrate that he/she has integrity, the unit is destined to have problems. Groben thinks: "Commanders need to personally address and speak with all pilots to explain what integrity means, why it's important, and what is expected from each pilot. They must specifically address situations where known violations of training rules happen frequently and encourage senior pilots to be publicly self-critiquing as an example to the new and less experienced flyers." This will probably be somewhat difficult for many commanders and senior pilots because of the "touchy, feely" nature of it all. Actually, many squadrons have this exact environment; however, it may not be recognized as such and talked about enough to keep the integrity and trust alive into the distant future. Groben asks: "What's the culture in your squadron, and what are you as a commander doing to change and improve it? Have you accepted that your unit has a culture? If not, look critically at how people operate and you will find a prevailing attitude that explains most of your unit's failures and/or successes." Fly Safe! ■

FY95 SAFETY GOALS

- **FLIGHT** *(Per 100,000 flying hours)*
  - ACC OVERALL CLASS A MISHAP RATE ≤ 1.6
  - ACC COMMAND-CONTROLLED CLASS A MISHAP RATE ≤ 1.0
  - ACC FIGHTER/ATTACK CLASS A MISHAP RATE ≤ 2.0
  - ACC CTP/BOMBER/C-130 CLASS A MISHAP RATE ≤ 1.0
  - ACC TNKR/BATTLE MGT/CARGO CLASS A MISHAP RATE = 0
  - ACC GAINED OVERALL CLASS A MISHAP RATE ≤ 1.6
  - ACC GAINED COMMAND-CONTROLLED CLASS A MISHAP RATE ≤ 1.0

- **WEAPONS** *(Per 100,000 fling hours)*
  - ACC MISSILE/EXPLOSIVES CLASSA MISHAP RATE ≤ 0.3

- **GROUND** *(Per 20,000,000 man hours)*
  - ACC GROUND CLASS A MISHAP RATE ≤ 0.8

AIR COMBAT COMMAND